

**REMARKS**

In the Office Action, claims 1-23 were rejected. Reconsideration and allowance of all pending claims are requested.

**Rejections Under 35 U.S.C. §102**

Claims 1, 2, 13 and 16 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,307,039 (hereinafter “Chari”). Further, claims 1-12 and 14-23 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,211,676 B1 (hereinafter “Bryne”).

**Claim 1 and the Claims Depending Therefrom**

Independent claim 1 recites, *inter alia*, an open magnetic resonance imaging (MRI) device. The open MRI device includes at least one main coil for generating a magnetic field and at least one shaping coil to shape the magnetic field in the said volume.

**Chari fails to anticipate an open MRI device having both main coils and shaping coils.**

The invention recited in claim 1 is inherently different from Chari for at least the reasons provided below. With respect to Chari, the reference discloses a series of coils, referenced by numerals 24 through 28. Applicants have carefully reviewed the reference and respectfully submit that the reference does not describe the coils as being either a main coil or a shaping coil. As will be appreciated by a person skilled in the art, a coil cannot function as both main coil and shaping coil at the same time. Indeed, Chari would suggest that the multiple coils, together, must act as a main coil only.

As per MPEP 2114

Even if the prior art device performs all the functions recited in the claim, the prior art cannot anticipate

the claim if there is any structural difference. It should be noted, however, that means plus function limitations are met by structures which are equivalent to the corresponding structures recited in the specification. In re Ruskin, 347 F.2d 843, 146 USPQ 211 (CCPA 1965) as implicitly modified by In re Donaldson, 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994). See also In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1951 (Fed. Cir. 1999) (The claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, expressly or inherently.).

According to the Examiner's analysis, coils 24 through 28 constitute the main coil in Chari. As will be appreciated by a person skilled in the art, it is physically impossible and illogical for an imaging system to have coils that function as either or both main and shaping coils as are recited in the independent claim 1. Hence the Chari coils cannot constitute main and shaping coils at the same time. Therefore, Applicants submit that Chari fails to support a *prima facie* case of anticipation of independent claim 1 under 35 U.S.C. §102(b).

**Bryne fails to anticipate an open MRI device having shaping coils.**

The invention recited in claim 1 is inherently different from Bryne for at least the reasons provided below. With respect to Bryne, as would be appreciated by those skilled in the art, shaping coils and shielding coils are inherently two different structures having entirely different functions in an MRI device. The shaping coils, typically, are used to shape the magnetic field from the main coils and to create a homogeneous magnetic field around an imaged area. However, shielding coils in an MRI device are used to shield the imaged area from external electromagnetic induction and also prevent loss of the magnetic field around the imaged area. Thus, Applicants submit that shielding coils and shaping coils are clearly different and are used for two different purposes. Furthermore,

Applicants submit that Bryne discloses only shielding coils for an open MRI device, while claim 1 recites shaping coils. Therefore, for at least this reason, Applicants submit that Bryne fails to support a *prima facie* case of anticipation of independent claim 1 under 35 U.S.C. §102(b).

Therefore for the at least above reasons, Applicants respectfully submit that Chari and Bryne fail to support a *prima facie* case of anticipation of independent claim 1. Applicants request the Examiner to reconsider the rejection of claim 1 and all the claims depending therefrom.

**Claim 17 and the claims depending therefrom**

The Examiner rejected claim 17 under 35 U.S.C. §102(b) as being anticipated by Bryne. Independent claim 17 recites, *inter alia*, a magnetic resonance imaging apparatus for imaging a volume. The apparatus includes at least one main coil configured to generate a magnetic field and at least one bucking coil configured to shield the magnetic field in the volume. The apparatus further includes a plurality of shaping coils to shape the magnetic field in the volume and a plurality of ferromagnetic rings for shielding interactions between coils of opposite polarity where at least one of the ferromagnetic rings is positioned between the at least one main coil and the at least one bucking coil.

**Bryne fails to anticipate an open MRI device having shaping coils.**

The invention recited in claim 17 is inherently different from the apparatus described by Bryne for at least the reasons summarized below. With respect to Bryne, Applicants have carefully reviewed the reference and respectfully submit that Bryne clearly does not anticipate an open MRI device having shaping coils. Bryne only discloses driving coils, shielding coils, and iron rings. Bryne fails to disclose shaping coils as recited in claim 17. As will be appreciated by a person skilled in the art, shaping coils are inherently different from the shielding coils and driving coils. The shaping coils, typically, are used to shape the magnetic field from the main coils and to create a

homogeneous magnetic field around an imaged area as described previously. However, Bryne fails to anticipate the use of the shaping coils. Moreover, the shielding coils of Bryne are not intended to, and do not function as shaping coils. Therefore, for at least the above reason, Applicants submit that Bryne fails to support a *prima facie* case of anticipation of independent claim1 under 35 U.S.C. §102(b).

**Claim 20 and the claims depending therefrom**

In view of the reasons set forth hereinabove for the rejection of claim 17 as being anticipated by Bryne, Applicants submit that claim 20 and the claims depending therefrom are equally allowable, and respectfully request the Examiner to reconsider the rejection of the claims.

**Claim 23**

Claim 23 recites, *inter alia*, an open MRI device that includes first and second main coils for generating a magnetic field for imaging a volume. The open MRI device further includes first and second sets of shaping coils that are positioned radially within the respective main coil and axially further from the volume than the respective main coil or in a plane of the respective main coil to shape the magnetic field in the volume.

Applicants respectfully submit that Bryne fails to support a *prima facie* case of anticipation of claim 23. Bryne discloses driving coils and shielding coils in the open MRI device. However, Bryne fails to disclose the shaping coils recited in claim 23. As explained previously, shaping coils are used to shape the magnetic field from the main coils and to create a homogeneous magnetic field around the imaged volume. Therefore, in view of the difference set forth above, Applicants submit that Bryne fails to support a *prima facie* case of anticipation, and request the Examiner to reconsider the rejection of the claim.

**Rejections Under 35 U.S.C. §103**

The Examiner rejected claims 12 and 14 as being unpatentable under 35 U.S.C. §103(a) over Chari. Claims 12 and 14 depend from an allowable base claim. Therefore, in view of such dependency as well as for the subject they separately recite, Applicants respectfully submit that claims 12 and 14 are patentable over the cited art.

**Conclusion**

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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